

EXHIBIT 9-B

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to the sewage disposal plant?

A By way of the reverse flow in the line from the Third Ward station to that 16-inch loop system. It is pumped from West Side to Third Ward, repumped from Third Ward into the loop system, hence a delivery to the sewage plant.

Q Do I understand then that the portion of the coke oven gas that goes up to 16-inch South Barkley Street line, never goes into the Third Ward station storage?

A It can in that it is a loop, with a connection from it. Whatever the proportion of gas is through one line or through the other is in that proportion which it represents in resistance to flow.

Q Then it is never routed straight across there at the point to the right of way is marked, "East Florida Street"?

A It is never directed --

Q It is never routed straight through to the Third Ward station?

A I suppose a portion of it could in hours of excess, a portion of the coke oven gas could go by the Barkley Street line directly into the Third Ward line without passing a point nearest to the sewage plant.

Q But it is never taken through the Barkley Street line up to the point opposite the river crossing lines and

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then routed through the valves back down without going across into the Third Ward storage station, is that correct?

A No, that isn't quite correct. Some of the gas being routed through the Barkley line will flow, if you wish to call it, in the reverse direction again in this drawing, southward, to the junction point which I have referred to, the two valves leading over to the sewage disposal plant.

Q At what point is the natural gas mixture of gas mixed that goes to the sewage plant?

A Natural gas is delivered through our so-called intermediate high pressure cast iron system by lines not shown on this drawing to the Third Ward station, and by virtue of the higher pressure at which it is received at the Third Ward station, pressure being higher than the pressure of the coke oven gas in this loop system, is delivered into that loop system for mixing or commingling with whatever coke oven gas is being at that time delivered to the sewage plant.

Q Is it true that during the year 1951 and during the 12-months ended July 1952, Milwaukee Gas Light actually delivered to the Sewerage Commission more gas than it purchased from the coke plant?

A I think that is true.

Q Isn't it true that in both those periods, it delivered substantial quantities of natural gas to the

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Sewerage Commission?

A That is correct.

Q Is that a daily supplement to the Sewerage Commission gas?

A It is.

Let me explain further the normal operation. The coke plant is obligated under this contract to deliver to Milwaukee Gas Light a minimum of 60,000 therms per day while Milwaukee Gas Light has an obligation to Sewerage to deliver a maximum of 70,000 therms a day.

To the extent that Sewerage requires more than 60,000 therms, or the amount which the coke plant delivers to Milwaukee Gas Light, Milwaukee Gas Light Company is obliged to supplement the coke oven gas which it delivers to Sewerage with natural gas.

Q How is that supplementation affected in actual day-to-day operation? Does it mean that there is some natural gas mixed with the coke oven gas each day?

A Yes.

Q Each hour of the day?

A Each hour. Except for hours in which the requirement of Sewerage is equal to or less than coke oven gas, in all such hours we are supplementing natural gas in the total gas being delivered to Sewerage.

Q What gas is actually in storage at the Third Ward

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station during the day-to-day operations?

A That 850,000 gas storage holder is filled largely with natural gas, and whenever coke oven gas mingles with it -- let me give you an operating picture. We keep that holder at about mid position. If coke oven gas is received in excess of some 350 or 400,000 cubic feet, that holder is getting pretty close to the top.

The operators then clearing with the West Side station start delivery of this mixture of natural gas, coke oven gas, to West Side for delivery into a holder which also contains some natural gas.

So that there will exist in the storage holders at both Third Ward and West Side mixtures of coke oven gas and natural gas.

As I say, when the subsequent period arises that the requirements again of Sewerage are greater than the current production rate of the coke plant, then we pump this mixture back to the coke plant -- back to the sewage plant. It is then a mixture of coke oven gas and natural gas.

Q I understand that both the Third Ward station and the West Side station together with the interconnecting pipeline facilities, are all utilized in connection with the supply of gas to the Sewerage Commission?

A That is correct.

Q What other purposes are they used for?

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A The two lines from the West Side to the Third Ward plant are used for -- at least one of them at a time is used for the distribution of natural gas into the eastern section of the city of Milwaukee.

I think you can see that very well from the large map. If you will follow on the large map, the delivery of natural gas from the Michigan-Wisconsin pipeline system at the point marked "7" on that map, which is our city gate, natural gas then flows northward and eastward to a point where it intersects an east and west line which is marked on that drawing as West Wisconsin Avenue; eastward to a direct angular representation on that drawing which is, by the legend of this map, a regulator station.

The pressure is reduced from approximately 150 pounds, which is the pressure at the inlet side of this regulator, to somewhere about anywhere from 15 to 50 pounds per square inch, delivering by way of the 22-inch line shown on that drawing to the West Side station, and then from the West Side station by way of either the 20 or the 24-inch line to the Third Ward station where it enters the network, the intermediate high pressure distribution network for the East section of the city of Milwaukee.

The 16-inch lines of Exhibit 76 are not used for any other purpose than the handling of gas to the Sewerage Commission .

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Q Ex the Sewerage Commission obligation, would it or would it not be true that both the West Side station and the Third Ward station storage capacity would be entirely available for the distribution requirements of the Milwaukee system?

The Witness: May I have the question.

(Question read.)

Q For the distribution system as a whole?

A Yes.

Q So that it is only the Sewerage Commission obligation that requires the so-called reverse utilization?

A That is correct.

Q What is the maximum storage capacity of the West Side station?

A The maximum storage capacity of the West Side station is 21 million cubic feet.

Q That is reflected on Exhibit 80, I believe, is that correct?

A That is correct. They represent four low pressure storage holders, respectively 18 million and 3 million cubic feet of capacity.

Q Does Milwaukee Gas Light have any storage facilities other than the 21 million at West Side station and 850,000 at the Third Ward station?

A We have several small so-called pressure storage

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tanks which are part of our system, but they are out in the portion of our service area generally beyond Milwaukee County. They are part of what was at one time called the high pressure distribution system. Those tanks are almost insignificant as far as the requirements of the system are now concerned, and probably will be out of the system before very long, because of being overage.

Q It is fair to assume that the West Side station and the Third Ward station constitute by far the major portion of the present storage capacity?

A For the low pressure gas storage, yes. Of course we consider LP storage as another form of gas storage.

Q Does this exhibit reflect the added storage capacity that would be the result of the LP storage?

A No. The LP storage is not included in the statements of Exhibit 80.

Q Approximately what would that add to the storage?

A I relate gas storage and liquified storage in terms of gallons of liquified petroleum gas. We have 1,024,000-some gallons of liquified petroleum gas storage.

Q Would that be the equivalent of the potential production capacity?

A That gas, that liquified petroleum gas in storage of course is deliverable to the system after vaporization or application of heat to it. That is the only operation that

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is required to convert it.

Q What is the present aggregate production capacity of Milwaukee Gas Light, aside from the coke plant?

A That is shown in Exhibit 71. Our productive capacity of high Btu oil gas is 169,000 therms per day -- and this is on the basis of emergency standby -- and petroleum gas could be delivered into the system along with such high Btu oil gas and coke oven gas to the extent of 167,000 therms per day.

Q To make an aggregate of about 345,000 therms?

A Yes.

Q As I understand the maximum sendout during the 12 months ended July 31, 1952, other than to the Sewerage Commission, was about 1,090,000, is that correct?

A 1,093,000. I believe that is right.

Q Assuming an interruption of pipeline capacity, how long would Milwaukee's present production capacity, including the coke plant, supply the maximum daily requirement of Milwaukee on a maximum day?

A On a maximum day, with 1,093,000 therms as experienced to date, if there were a complete failure of the pipeline, no natural gas delivered to us at all, we of course couldn't take care of even one day's requirements.

That 455,000 therms total would not suffice for any one day without there having to be serious curtailment of use.

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Q How long would it supply the requirements without the capacity of the coke plant?

A I would say, in the proportion that 345,000 -- wait a minute. You would have to take it back in the ratio of --

Q You would have to take it back to storage capacity, wouldn't you? Well, we could take some gas out of storage but of that 21 million cubic feet in storage, you wouldn't have it right up to the very gunwales every day. It would probably be somewhere in the neighborhood of 19-1/2 or 20 million.

That allows for the expansion of gas in storage due to the sun hitting it. So that your effective withdrawal of gas from storage, from the low pressure gas storage holders, would be somewhere around 16-1/2 million.

Q If you had a complete interruption and you had to depend on these two manufacturing facilities, and you started them immediately into your storage capacity, how long would you go before your storage capacity would be exhausted?

A Along with the production, exclusive of the coke oven gas available?

Q Do it both ways.

A It would be less than one day.

Q Would 8-1/2 hours appear to be about correct for the combined operation?

A I would have to check that.

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Mr. Dern: You are assuming nobody would be curtailed or out off?

Mr. Clevenger: I am assuming a maximum day's sendout and having to draw entirely on his standby facilities to supply it.

That is the first question I asked him.

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The Witness: Relating all of this to the maximum day that has been experienced, namely the 1,093,000 therms, if all of the emergency standby facilities shown as per Exhibit 71 were available, that amount of gas produced would be sufficient for approximately 10 hours of that maximum day.

That again presumes that the requirements of that day are pretty well uniform as on a maximum day they usually are. If you include the gas that was in the storage holders, that would be extended to somewhere around 15 hours total time.

Without the coke plant the story would be about 7-1/2 hours, and 12 hours, respectively.

Q What storage capacity are you basing that on?

A I am basing that on approximately 18,000,000 feet of withdrawal of gas from storage.

Q Tell us how you would go about that in the operation. Wouldn't you start taking gas out of the storage and replacing it by your manufacturing equipment?

W/A You surely would.

Q At the rate of replenishment as compared to maximum demand, do you think it would last ten hours with the combined facilities?

A With the combined facilities it would last approximately 15 hours.

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Q There would be how much difference if the Coke Company --

A Twelve hours.

Q Do you mind telling how you arrive at that computation?

A I have taken the 455,000 over the 1,093,000, which is approximately 40 percent. I didn't carry out these divisions to more than the first or second significant figure. That in terms of 24 hours is 9-6/10 or approximately 10 hours.

If you add the 18,000,000 feet of gas, natural gas to be withdrawn from storage, approximately 180,000 therms, then you reach something better than 60 percent of the combined 455 plus the 180, ratioed to the 1,093,000, or approximately 60 percent of the maximum day, which in terms of hours is 14-1/2 or 15 hours.

Q I think you testified a moment ago that the 850,000 storage at the Third Ward station was normally kept about half full of natural gas?

A That is correct.

Q Is that also true of the holders at the West Side station?

A We carry that, I would say, somewhere near two-thirds capacity. We have some drift. We found by experience that the volume of coke oven gas which must be taken into

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the holder system is relatively infrequent and the quantity isn't very great. So we don't have to allow too much spare space in gas storage for coke oven gas.

Q When you take coke oven gas from the east side over to the west side and put it in one of those storage tanks filled with natural gas, can you operationally take that directly out of that storage tank and put it in the system?

A We could, yes. But we don't do it because it is a gas of different composition than the gas which we are delivering into the system.

Q Would it accommodate the system even though it is not natural gas?

A I think in the ratio, the small ratio that we would carry coke oven gas mixed with natural gas in that one holder, I think you might have some tolerable service as far as the customers appliances are concerned, yes.

Q What is the Btu content of the gas that goes to the Sewerage Commission?

A Presently it is in the range of 500 to 520 Btu.

Q Is that after enrichment with natural gas?

A No. That is before enrichment. That is coke oven gas without any additions made to it.

Q You testified, as I recall, a moment ago that almost daily in operations, in order to meet the Sewerage Commission's daily fluctuating requirement, each day there was natural

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gas fed into that coke oven gas?

A That is correct.

Q Is there any variable in the Btu content of the gas that the Sewerage Commission can use?

A There is.

Q What is that tolerance?

A The variation in Btu ranges between 500 and 650.

Q What is the Btu content of the coke oven gas?

A 500. 500 to 520, I should say.

Q What Btu content is required to meet the distribution specifications burner tip requirements of Milwaukee?

A In Milwaukee? You are not talking about sewage?

Q I am talking about Milwaukee.

A We are on a therm rate and we are delivering natural gas of a Btu ranging between 970 and 983, approximately.

Q That is the actual Btu content.

A That is the actual Btu content of natural gas as received.

Q You said, as I recall, from your computation you get approximately a 4 to 5 hour difference between the standby facilities with the coke plant as opposed to operating without it?

A No. That is between the combined facilities with and without the withdrawal of all gas from local pressure gas storage. Take it across the other way, it is about three to three and a half hours.

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Q What percentage of the maximum day's requirements, about which we are talking here, would the total capacity of Solvay be?

A Approximately 10 percent.

Q What percentage would Solvay's total capacity be of the annual requirements of Milwaukee for the 12 months ended July 31, 1952?

A The total capacity of Solvay at 110,000 therms per day, times 365, divided by our annual send out. You want that for the 12 months ending when?

Q July 31, 1952.

A I haven't got the greatest refinement in the figures on send out, but reaching for Exhibit 79, in which total natural gas purchased is stated as 199,336,119 therms, this in ratio to the total coke oven gas, namely 110,000 therms times 365 days, will give a ratio of 20 percent as an answer.

Q Can you tell us what percentage increase there has been in Milwaukee Gas Light total gas requirements for the 12 months ended July 31, 1952, as compared to the 12 months ended December 31, 1949?

A The 12 months ending 1949 -- for the 12 months of 1949 the total gas produced and purchased was 72,924, 599 therms, this compared to the experience of the 12 months ending July 31, 1952, in which I have stated we had purchased 199,336,119 therms.

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Q Would it be a reasonable conclusion that the annual requirements of Milwaukee Gas Light for the 12 months ended July 31, 1952, were approximately three times the annual requirements of Milwaukee for 1947?

A I gave you 1949. The total gas produced and purchased in 1947 was 68,140,902 therms. It is roughly three to one.

Q Mr. Brenner, let's get back for a moment to our emergency computation. Would it be correct to say that you would have to average the manufacturing capacity of Milwaukee Gas Light, to combine manufacturing capacity, including the Coke Company, over a 24-hour period in order to determine how long you could run if you were down from natural gas?

A Yes. You would have to average. You would have to assume an average.

Q Will you tell me how you take 110,00 therms maximum capacity of the coke plant as compared to 1,093,000 maximum send out, and arrive at the hours of supply that you have?

A What I did was to obtain a ratio that the amount of coke oven gas produced, bears in relation to the total therms delivered on that maximum day, and then apply that percentage to 24 hours.

Q Would you get the same result by taking the total of 455,000 therms and applying it to the maximum day requirements, and then following the same process without the 110,000

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to get the differential between how long the Milwaukee facilities would supply without the coke plant?

A Yes.

Q Would you check that again to see if your ten hours and fifteen hours isn't considerably optimistic?

A The 455,000 therms related to the maximum day of 1,093,000 therms, as I indicated by my computation, was 9.6 hours, rounded out to roughly 10 hours. If you take coke oven gas out of that the production of oil gas plus the amount of petroleum gas which I have indicated as available under emergency conditions on Exhibit 71 is 176,000.

The two combined are 345,000 therms. That divided by 109.3, roughly 30 percent, related to 24 hours, is 7.2 hours.

Q So that there is a difference on your computation of about 2.8 hours between utilization of the coke plant and non-utilization.

A Again on the premise that these facilities are going to be called upon or not called upon on a maximum day. I think that is a premise that is open to question. But if that is the way you phrased your question, I answered it in that fashion.

Q Wouldn't that of necessity follow if you had a complete interruption of natural gas supply on a maximum day?

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A Yes, that would follow, if that were to take place. I think that is, however, a combination of circumstances that you would want to debate a bit, whether that is at all likely to happen.

Q What would be the situation at that point with respect to the impact of curtailment on that maximum day requirement?

A On a maximum day, if there should be such a thing as a complete curtailment of natural gas -- that might also in a measure be true of any curtailment, even partial curtailment of natural gas -- we would proceed immediately to cut off, if at that time we had any interruptible industrial customers, we would notify them immediately to knock off.

Q The Sewerage Commission is an interruptible customer?

A It is an interruptible customer.

Q What other interruptible customers do you have?

A We have some interruptible customers under our present selling arrangement. There are a number of large industries which are being sold on an interruptible basis.

Q Will you give us some approximation of the requirements of those industries on a maximum day?

A I don't believe that we would have -- except that there should be a very flush situation with respect to natural gas -- those interruptible customers would not be on

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a system on a maximum day. But if they should be, they would be of course the first to be knocked off. Then I think we would go to the largest of our industrial customers and appraise them of our situation and ask them to curtail or interrupt so that we would have a maximum of available gas available to the hospitals and to the domestic users where failure would mean a near catastrophe.

Q Do I understand from you that on this maximum day that you experienced for the 12 months ending July 31, 1952, 1,093,000 therms, that there were none of your industrial customers on your line at that date?

A I don't believe there were any interruptible customers on it at that time.

Q What percentage of interruptible load do you have?

A I haven't got that information available immediately. We would have to figure that out for you.

Q Can you give us a list of your industrial customers and their requirements?

A Yes, I think we can. I believe it is in this record at some other point. *no*

Q Would that be in your report to the Wisconsin Commission?

A Yes, I believe it would be. *no*

Q I think the only thing there is the total rather than the individual requirements, and the extent to which --

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A Total industrial customers?

Q We would like to have the schedule of the industrial customers, their requirements and the interruptible provisions summarized, at least.

A We have that information.

Mr. Foote: Interruptibles?

Mr. Clevenger: That is all I am asking about now. First start with the industrial customers. What industrial customers do you have? And what are the requirements? Then as to those that have any interruptible, whether they have an interruptible contract or service, what the interruptible conditions are and what, if any, have to have at least a minimum during that interruption in order to keep from going down entirely.

Mr. Foote: May I state one thing that might refresh Mr. Brenner's recollection. We were in Milwaukee when we checked the record. You found there were some interruptibles on the line on that maximum day.

The Witness: I don't recall that. I would have to refresh my memory on that.

By Mr. Clevenger:

Q How was the price at which Milwaukee Gas Light buys coke oven gas from Solvay determined for the purpose of this contract, Exhibit 74?

A It was made to tie in with our sale of coke oven gas to sewage.

Q How was the sale price in the contract between

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Milwaukee Gas Light and the Sewerage Commission determined?

A That was determined as a result of rather extensive negotiation between the Sewerage Commission and the Milwaukee Gas Light Company. The Sewerage Commission, of course, took the position that it was replacing solid fuel because prior to the delivery of this gas they were firing their dryers and their boilers with solid fuel but with one exception. They had one dryer that was oil fired. The remaining dryers and boilers were all on solid fuel. They were measuring the price which they could afford to pay and which would be advantageous to them, with the price that they were paying for solid fuel and making allowance for the advantage of natural gas such as greater cleanliness, freedom from ash handling and ash disposal and so on.

Q In other words, it was a competitive price, in substance, with coal?

A It was. That is correct.

Q And the agreed price was the cost of coal where?
On the dump?

A No. The cost of coal as is computed by the Wisconsin Electric Power Company in its primary power agreements with major industrial customers in the Milwaukee area.

Q Does that call for the cost of coal to Wisconsin Electric Power on the dump?

A I believe it is in their storage. I don't know

ht12 specifically that it includes any handling or any preparation prior to being fired under their boilers.

Q Then as I understand it the contract between Milwaukee Gas Light and Milwaukee Solvay in turn provides in substance that Milwaukee buy the coke oven gas at the same price it sells it to the Sewerage Company? Or vice versa. Sells it to the Sewerage Commission at the same price it buys it at the coke oven.

A I think the reverse is true.

Q Was there any element considered in that price from Milwaukee Gas Light to the Sewerage Commission for the utilization of Milwaukee Gas Light's own facilities to get the gas to the Sewerage Commission?

A I don't believe that it was. It entered of course in our determining what represented a good contract for Milwaukee Gas Light Company. I don't recall that there was a specific computation as to what is the cost of using existing lines between the coke plant and in effect the sewage plant.

Q Do you know of any other industrial customer in Milwaukee that you serve that gets gas at cost to Milwaukee?

A I don't believe so. ¹⁰ Of course that second 10,000, or that increment of 10,000 therms from 60 to 70 thousand therms, that is priced at a figure substantially higher than are the 60,000 therms minimum.

Q Is that price governed by the industrial tariff on file with the Wisconsin Commission?

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A Yes, it is. It is the price which our large firm industrial customers pay us for gas, according to the existing tariffs.

Q What about the natural gas that is supplied by Milwaukee Gas Light to the Sewerage Commission as a supplement to this coke oven gas? Is that sold at the same price the coke oven gas is?

A No. Let me qualify that answer in this fashion: The coke plant delivers a minimum of 60,000 therms. They fulfill their obligation. Then the additional gas which in these cases is natural gas, required by Sewerage, that is sold, as I have indicated just previously, in that 10,000 therm increment at the firm industrial rate.

Q That part of it at least is according to the filed rate tariff?

A That is correct.

Q How does the Sewerage Commission compare that portion of the gas which they get at cost with the cost of solid fuel?

A I believe that they feel that that is priced considerably higher. I shouldn't say considerably higher. It is priced higher. ?

Q The 60,000 therms minimum that we have been talking about here is actually the surplus coke oven gas of Solvay, isn't it, over and above what it uses itself?

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A The word "surplus" in that connection I think should be modified to this extent: It is the resultant net gas after they have used their requirements of coke oven gas for underfiring. It is the release of gas from their normal operation. When I say "normal operation" I mean that they are not using any other supplemental fuels for underfiring.

Q They are not required to use any other fuels for underfiring except in emergency under these contracts, are they?

A That is correct.

Q And the 60,000 therms per day gets rather close, does it not, to their maximum capacity to produce without underfiring?

A I believe that they are operating their plants so as to at all times meet their obligation with respect to the delivery of coke oven gas to Milwaukee Gas Light.

2. Q Isn't it a fact that it is the maximum which you can require them to deliver at 67,600?

A 67,600 was a representation made at the time that this contract was negotiated, and it was at that time and under those conditions the amount of gas which they were then producing.

Q Doesn't the contract say they shall not be required to deliver a maximum of in excess of 67,600, other than under the emergency provisions of the contract?

A That is correct.

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Mr. Clevenger: Might we have a five-minute recess at this time?

Hearing Examiner: Yes. We will have a short recess. (Whereupon, a brief recess was taken.)

Tape 5

Hearing Examiner: Let us come to order.

By Mr. Clevenger:

Q Mr. Brenner, will you refer again for a moment to Exhibit No. 76? I am not sure, but my recollection is that we didn't ever get clear in the record the point at which the natural gas that is mixed with the coke oven gas and sent down to the Sewerage Commission takes place.

A That mixture takes place at a point in that inter-connection of piping just to the right of the ST of East Florida Street marked on the center of that map on that 24-inch line.

That is the point where the mixing takes place.

Q That is, so to speak, across the river from the Third Ward station?

A That is correct.

Q Does natural gas that is mixed at that point come through from the west side through that 24-inch line?

A Actually it is gas presently coming in over other lines other than this 20 or 24-inch. We have other distribution piping which generally parallels these two lines. These two lines, this 20 and 24-inch line, in the manufactured gas

ht16 period, were the pumping lines which permitted the pumping of gas, coke oven gas and carbureted water gas, from the Third Ward station to the West Side station which was then the center of distribution.

Q But they do not represent the present lines which carry the natural gas to the point of mixture that we are talking about?

A They do not. They are other lines, part of a so-called intermediate high pressure network of cast iron piping.

Q If I understand correctly, that gas that is mixed at that point for utilization by the sewage disposal plant, does not come from the Third Ward station storage?

A It does not come from Third Ward station storage although there is a pressure regulating point at the Third Ward station. It amounts to what the gas distribution men call a "district governor."

There is also metering located at the Third Ward station. within the Third Ward station plant, just before such natural gas is delivered across the river. That is the point that we meter the natural gas being delivered into the system supplying the Sewerage Commission.

Q While we are on that point, the gas that is delivered to the sewage disposal plant is actually metered on the property of the plant, is that correct?

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A Of the sewage plant, yes.

Q The gas that is taken from the coke plant is metered at or about the property line of the coke property?

A It is metered within the coke plant. It is not quite at the property line. It is within the plant, effectively, you might say, at the property line.

Q During the twelve-months period ending July 31, 1952 you did not experience any situation requiring the application of the emergency provisions of the Milwaukee Gas Light and Milwaukee Solvay contract?

A That is correct. We did not.

Q All gas purchased from the coke plant during that period was delivered to the sewage disposal plant?

A That is correct.

Q And in addition there was a quantity of natural gas delivered to the sewage disposal plant?

A That is correct.

Q Referring to Exhibit 81, let me ask you what are the circumstances and what is the reason for Milwaukee Gas Light during that twelve-month period selling to its standby, Milwaukee Solvay, 4,212,000 therms of gas?

A Milwaukee Solvay is buying natural gas for the firing of its boilers for steam and power generation. I also believe that at times when the amount of coke oven gas that they produce is very close to the 60,000 therms per day mark,

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but slightly deficient, that they are using some natural gas along with the coke oven gas to meet that minimum delivery requirement and obligation to us. But the bulk of the natural gas that they are buying is being bought for the purpose of steam generation.

Q And what rate?

A Under the prevailing rates, the rates on file with the Public Service Commission.

Q Would it be possible for us to have in this record a copy of that industrial rate schedule that is applicable to Milwaukee?

Mr. Clevenger: May we reserve Exhibit No. 85 for that?

Hearing Examiner: 84 is the list of industrial customers.

When Applicant's Exhibits 84 and 85 are received and filed with the docket section, they will become a part of this record.

(Applicant's Exhibit 85 was
RESERVED.)

By Mr. Clevenger:

Q There is only one established industrial rate schedule?

A Yes, for firm gas. And one rate for interruptible.

Q Are they all in the same schedule or under different schedules?

A I am not too sure. I think they may be --

Mr. Clevenger: May we have both?

Mr. Foote: You want both?

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Mr. Clevenger: Yes. One will be applicable to the list, 84, and the other to the firm rate.

By Mr. Clevenger:

Q Do I understand that the natural gas which Solvay purchases from Milwaukee Gas Light is a day to day operation with them?

A That is correct.

Q Would that be a requirement of theirs irrespective of this other arrangement?

A It is.

Q Do they utilize any of that gas in any particular chemical processes that require a normal steady heat?

A I don't know that they do. I am not too familiar with just what their distribution of the natural gas which they purchase is.

Q It is your understanding that they use it to fire the boilers for steam generation?

A That is the principal use, yes. They may use some for underfiring ovens or mixing with gas that they are underfiring ovens with in order to get certain flame characteristics. But that is a detail that I am not sufficiently familiar with to testify on.

Q The answer to that question suggests to me, Mr. Brenner, another question. Describe for us if you will, briefly, the management of these two companies and what

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interrelationship there is between the actual management policies of the two companies?

A The management of the Coke Company is entirely apart, as far as operation is concerned, certainly, from that of the Milwaukee Gas Light Company. The officers -- as an operating officer of the Milwaukee Gas Light Company, for instance, I confer with the operating officers of the Coke Company to solve problems that occur from time to time.

For instance, schedule of maintenance, how their schedule of maintenance will affect gas delivery. If they run into any unusual situation they call our gas dispatcher and also call me if it is of a very vital nature.

Most operating problems which relate to the production of coke oven gas and the hourly generation of it and delivery into Milwaukee Gas Light Company are handled by the gas dispatcher. That also operates in the other direction. If something unusual has happened that the sewage plant, for instance, would call for a sudden curtailment of the amount of coke oven gas, we will get the call from Sewage generally to our dispatcher and the dispatcher in turn will call the vice president in charge of operations of the Coke Company, or the general foreman or superintendent in charge and try to work out a program with them whereby they can modify their operations so that the amount of surplus gas for that relatively short duration can be handled by our system without the

ht21

possibility of ways to atmosphere or flaring any gas. In addition to being dangerous that is a very spectacular thing and we don't like to see it happen.

Q This dispatcher to whom you refer, is he an employee of the Milwaukee Gas Company?

A He is an employee of the Milwaukee Gas Light Company.

Q As I understand it in general his functions are to keep a record of or have information available as to where coke oven gas is needed, when it is needed and how much is needed?

A That is correct.

Q He is in a sense the coordinator between the coke oven plant and the Milwaukee system?

A On an hour to hour and day to day basis. Then if unusual situations develop which call for a matter of policy likely to dig somewhat deeper than just this transfer of gas into the holders and out of holders, then I am consulted and we try to work out a program.

Q Who is the present executive operating officer of the Coke Company?

A Louis Karuz. (Kreuz)

Q How long has he been there?

A He is president. I believe he has been there some three or four years now.

Q Since 1947, would you say?

ht22

A When you tie it down to a definite date -- it would be in that general period.

Q I was trying to recall the name of the gentleman who testified in 1947.

A Jim Lovett.

Q That is the man. Are there any common officers between the two companies? Other than directors?

A I don't believe there are any officers in common between the companies.

Mr. Dern: I don't think there are. There are common directors.

Mr. Clevenger: How many common directors?

Mr. Dern: There is Mr. Fink, Mr. McElvenny, Mr. Sharp, Mr. Brown, and myself.

They are directors of both companies. There are also other directors that are not common.

Mr. Clevenger: What is the number of the present board of Milwaukee Gas Light and of Solvay?

Mr. Dern: In addition to those I mentioned on Solvay there would be three others.

Mr. Clevenger: Would the same be true of Milwaukee Gas Light? Three others?

Mr. Dern: Three others, yes. No, there are four others.

Mr. Clevenger: And a board of nine?

ht23

Mr. Dern: Why don't we just give you the names?

Mr. Clevenger: It will show in the material we have introduced.

Mr. Dern: Do you want those read in?

Mr. Clevenger: Just the number.

Mr. Dern: There are nine directors of the Gas Company, four of whom are not directors of the Coke Company. Then there are nine directors of the Coke Company, four of whom are not directors of the Gas Company.

By Mr. Clevenger:

Q So that it is a reasonable conclusion that the management is in substance and in effect separate and distinct except at the director level, is that correct?

A That is correct.

Q I think you testified this morning that on account of the flooded condition in Kansas as during the year 1951 there was some 14 days of natural gas interruption from that.

A From that source.

Q Was that 14 consecutive days?

A Yes, sir, it was.

Q I think you testified that during that period of time the service was kept intact by reversing the flow of the gas from the Austin field to Milwaukee?

A That is correct.

ht24

Q Was there any curtailment of service during that 14-day period?

A No, there was not.

Companies were alerted
Q So that at that time there was no experience under this emergency clause of the Milwaukee Gas Light and Milwaukee Solvay arrangement?

A There was not.

Q This 4,212,000 therms of natural gas which Milwaukee Gas Light sold to Solvay during the 12 months ended July 31, 1952, how was that gas delivered to Solvay?

A Again referring to the small map, Exhibit 76, that natural gas is delivered to the coke plant by way of a line coming from our intermediate high pressure distribution system and entering the coke plant from the west.

In other words, it does not involve any of the lines shown on this map.

Q Has there been any time, Mr. Brenner, since the completion of the changeover to natural gas in January 1950, when you have had occasion to have any operating experience under the emergency clauses of these contracts between Solvay and Milwaukee Gas Light, and between Gas Light and Sewerage Commission?

A Not to the point that we have ever used the capacity of any of the component facilities.

Q I think you testified this morning that without the Solvay facilities it would be necessary to install additional

ht25

LP gas facilities. Is that correct?

A I think we would have to give consideration to such installation, or to the production of other gases which could be used as an emergency standby. I didn't limit it to liquified petroleum gas.

Q Has there been any such facility installed other than what has been testified to in this record as to the supplemental LP gas?

A None have been installed.

Q Can you give us some idea of how much additional production facilities would be required if the Solvay property were not available?

A I have testified along that line before the Public Service Commission of Wisconsin. It is pretty difficult to speak with accuracy of the cost of standby equivalent to the Coke Company because, as I have testified earlier, these other standby facilities would be less satisfactory in many respects to the standby facility provided by the coke oven gas.

In our case, in the standby case before the Wisconsin Public Service Commission, we estimated that an LP gas storage plant able to produce 110,000 therms per day would cost about \$1,100,000 for land, structures, generating equipment, and related pumping equipment, and we estimated that the fixed charges on such a plant would be about \$184,000 per year.

ht26

Then in addition, of course, there would be an annual operating expense which we feel we can't estimate with any real degree of accuracy. It would be hypothetical.

Q Do you seriously think that you would consider installing a 110,000 therm capacity of standby equipment today, of any kind?

A I would say we would surely want to make a very careful study of the matter, should any such situation arise. We want to put in and install an equivalent amount of standby capacity.

Q Do you think it would be economically feasible to install such equipment for holding 110,000 therms?

A Yes, I think it would. I think you could, for instance, put in an LP plant, put in that amount of storage at a point on the system which would provide an appreciable degree of protection to the system. Whether it should be LP or whether it should be oil gas, I think you would have to make an engineering and economic study to determine what such a plant could do, where it could be located and how gas so delivered could be mixed with the natural gas being received, or how it would enter into the system of the company if there were a partial or complete curtailment of natural gas.

That requires a study because you would have to approach it from the standpoint of a number of situations, principal among which I would say would be the degree of curtailment that you have reason to expect.

ht27

Q You certainly wouldn't consider investing \$4,300,000 in an 110,000 therm storage?

A That is one that I can conclude immediately that we would not.

Q I think you testified this morning that in connection with the operations ex or without Solvay, there would be some limitations on the length of time that the oil gas, for example, could be utilized and the oil gas production facilities operated continuously, is that correct?

A That is correct.

Q And that the utilization of the high Btu oil gas, because of those limitations, would substantially reduce the production capacity of Milwaukee after those initial days of operation. Is that correct?

A That is correct.

Q Can you give us some estimate as to how much percentagewise that production capacity would be reduced by reason of that situation?

A The most serious problem that I see that we would encounter would be a form of indigestion of that plant resulting from the accumulation of large quantities of tar and tar and water emulsions. The oil gas plant, as it is now in readiness for such operations, has been cleaned out completely with respect to cumulative tar and tar emulsions.

When you operate it -- and I anticipate that when you

ht28

operate that oil gas plant at the relatively high oil conversion rate that is here involved, you would in the course of five to seven days begin to pile up quite a bit of tar and tar emulsion.

If the tar were to separate nicely into dry salable tar then the problem wouldn't be so great. But the thing that happens and not only is very prone to happen but happens very frequently in oil gas standby plants, you get into a situation where a large quantity of tar-water emulsion is formed, and since you can't possibly let any of this water or an aqueous effluence in the plant carrying tar or oil get into the river or into the sewer system, that is about the time that it would choke you off and that is the form of indigestion that I talk about, and one of the limitations of the extended operation of the oil gas plant.

Q Will you relate that to the 345,000 therms per day of Milwaukee Gas Light and give us some estimate percentage-wise, at least, as to what that reduction in production capacity would be?

A I believe that statement is contained in one exhibit. In Exhibit 71, under Milwaukee Gas Light Company, high Btu oil gas production, in the latter part of that statement I state that oil in storage at the plant will suffice for seven days of operation at this capacity and for an extended period if oil is supplied at the rate of 188,000 gallons per day.

ht29

After a ten-day period the capacity will be somewhat less due to manufacturing problems. The manufacturing problems I refer to are the --

Q That somewhat less is what I am asking for.

A That is right.

Q Can you tell us what you mean by "somewhat less"? Would it be 10 percent, 50 percent?

A I think that you would probably get along to the stage where you would probably be doing awfully good if you continued to operate at 50 to 60 percent of the 169,000 therms which we are indicating after the system once gets loaded up with a lot of tar.

On the other hand it can very well be that it may not be quite that serious. Probably the dimmest view to take would be that it would limit your high Btu oil gas production to somewhere around 50 percent.

Q Incidentally, when we speak about oil gas plant here, you don't really mean an oil gas plant. Don't you mean a high Btu water-gas plant?

A No. The water gas sets have been revamped into a system of oil gas production. We have removed the -- actually we have discontinued or removed the generator of the former carbureted water gas plant. We have modified the checkers in the carburetor and super heater of the former water gas sets in such a manner that we make, in effect, a generator out of the carburetor.

ht30

To that point we provide the oil and burn some of the oil to generate heat in the system to store it for the subsequent cracking step in the cycle. At that stage, after the set has been heated, and the fuel oil or the oil for heating has been cut off, then we admit oil for cracking and that gas that is so produced is truly an oil gas.

Q So that you are not talking about a high Btu water gas?

A No, we are not talking about a high Btu water gas. It is a high Btu oil gas. As we have modified these sets they have been modified pretty much along the line of the modification of the sets of Michigan Consolidated. They have operated their sets -- they have produced a lot of oil gas in their operation and we know that that system is a good workable operation.

We have operated --

Q Do you know whether or not it has any trade name process?

A I don't believe it has a trade name process. In other words, it is not a Hall modification. It is simply a conventional oil gas machine.

Q I think you said something about the additional capacity above the 60,000 therms a day of Solvay being available on rather short notice in the event of emergency. Can you make that a little more specific about what you mean by short notice or short time?

ht31

A Yes. The coke plant and the operating personnel at the coke plant believe that they can get the first of their producers, their gas producers, into operation in three to four hours, and get the full producer plant into operation in ten to twelve hours.

Q How much time would it take Milwaukee Gas Light to get its own oil gas production equipment into operation?

A I believe we can get some production under way in about three to four hours and should be able to get full capacity on the line in less than 12 hours.

Q In other words, approximately the same time it would take the Coke Company?

A That is correct.

Q Isn't it true, Mr. Brenner, that each year Milwaukee Gas Light does sell to the Coke Company some gas manufactured by its own equipment?

A No, I don't believe we do, although --

Q Maybe I asked the question with the wrong company. Isn't it true that during the period from 1951, and 12 months ended July 31, 1952, Milwaukee Gas Light manufactured gas with its own manufacturing equipment and sold it to the Sewerage Commission?

A That is correct. Those are the trial runs of operation of the high Btu oil gas plant and a certain amount of LPG which under a purchase arrangement we are obligated

ht32 to take as a minimum through the year.

Q In other words, in order to keep the manufacturing equipment in shape?

A Keep it in shape and keep the personnel trained and make sure that we can keep into operation if we are called to within an emergency. That gas, rather than being distributed for delivery into our general distribution system, we were able to work off into the deliveries to sewage.

Q This morning in your discussion of the present cost of this standby equipment you stated that the \$100,000 a year which Milwaukee Gas Light was paying Solvay was a fee fixed by the Wisconsin Commission as the maximum that it would allow between affiliate companies?

A That is correct.

Q And that if there were an independent ownership you would expect a higher fee. On what basis do you place that expectation of a higher fee?

A I place that on the representations which the Coke Company has made of their expense in keeping this equipment in readiness. They have studied the cost to them of keeping this equipment in readiness and they feel that the fee should be more than \$100,000.

Q Is it true that the present contracts are for a term and are assignable without the consent of either party and binding upon the successors and assigns --

ht33

A That they are assignable --

Q In other words, any independent owner acquiring Milwaukee Solvay today would be bound by the existing contract between Milwaukee Solvay and Gas Light, would he not?

A Yes, unless we absolved them of that obligation and Milwaukee Gas Light Company took it on.

Q Certainly you wouldn't absolve them if you needed it?

jf fls

A No. Not if we needed it.

jfl
fls ht

Q What was the reason, if you recall, the basis and the reason upon which the Milwaukee Commission found that the \$100,000 a year was the maximum that it could or would allow between affiliate companies?

A As I recall, testimony was introduced at that time as to what the cost of a hypothetical LPG plant would be. I testified in that respect and the gas engineer of the Public Service Commission made some estimates and testified. The Commission in its order took certain recognition of both of these and concluded -- I don't know what the method of their conclusion was -- that \$100,000 was a proper amount.

Q What other amounts were suggested or recommended or considered?

A As I stated earlier, an LPG plant capable of producing 110,000 therms per day would, as of that time, cost \$1,100,000, and that the fixed charges on such a plant would be \$184,000 per year.

Q In view of the fact that the gas lines and storage capacity of Milwaukee Gas are used to handle the coke oven gas, do you think that the comparison of the \$100,000 and the \$184,000 is fair?

A Probably not a direct comparison. I think you would have to qualify that with respect to what is the un-depreciated value of lines and so forth. All of that would have to enter into the picture to arrive at a figure possibly

jf2

somewhat less than the \$184,000 as fixed charges on the plant, an LPG plant.

Q Can you give me an estimate or approximation of what you think would be a fair use value to charge Milwaukee Solvay for the privilege of sending its gas through Milwaukee Gas lines to the Sewerage Commission if they were operated on an independent ownership basis?

A I haven't made such a study. That would be quite a guess.

Q Certainly it would be something in excess of what they are now getting, wouldn't it?

A They -- in this sense you are using the pronounce --

Q Milwaukee Gas Light would be entitled to more than it is now getting from Solvay for utilization of those facilities, would it not?

A I don't know that I can made a conclusion in that respect. There is a lot of hypothesis in that.

Q It is simply a question of weighing, is it not, the cost to Milwaukee of the use of that much property investment as compared to what benefits that it may get out of the standby facilities?

A I think that would be a very simplified statement of it.

Q Isn't that in essence what you do, irrespective of the mechanics that you go through to get it?

jf3

A Yes, I think that would be about right.

Q I think you also testified that without the availability of Solvay the added cost of comparable capacity would result in a substantially higher cost of gas to the Sewerage Commission and to Milwaukee Gas Light in emergency situations. Why do you think that is true if you consider all of the elements of cost that Milwaukee Gas Light has in the present standby arrangement?

The Witness: May I have the question read?

(Question read.)

By Mr. Clevenger:

Q In other words, what would it cost to furnish. The \$1,200,000 that you mentioned a while ago, do you think that is what it would cost to supply a comparable volume of capacity to what Milwaukee Solvay has?

A I testified, I said that I had testified to \$1,100,000 as of that date for land, structures, generating equipment and the related pumping equipment.

Q What do you compare to that or with in order to arrive at your statement that the cost of the gas for standby purposes to Milwaukee would be substantially higher?

A You would have to allow for the fixed charges on such a plant, and then you would also have to maintain personnel at that plant even though there wasn't a therm of gas to be produced for quite some time. They would have to be

jf4

available at all times. That crew and all of the pumping equipment and facilities kept in readiness, in the same degree of readiness, and in the same degree of availability that the coke oven gas is available to us now, I think that would entail quite a bit of expenditure.

My conclusion from that is that that gas, under emergency conditions, would cost us more than the coke oven gas costs us now.

Q What personnel and staff do you now have to operate Milwaukee Gas Light's own manufacturing equipment in the event of an emergency?

A We maintain at the oil gas plant -- we operate or maintain a crew in the boiler room sufficient to bring that boiler plant into substantially capacity operation. We also need the personnel to operate those boilers to keep the plant heated and supply steam to our immediate repair shop and our garage and related service shops.

Then we keep a chief gas maker and one gas maker available at all times around the clock in that plant. We have a power plant engineer and one oiler who are on duty the clock around. Then we have one man who is not quite on a clock around basis.

I believe that man is available five days a week for a 40-hour working week to look after the oil handling and the tar handling equipment and to keep that in shape, and exercise

jf5

it reasonably and so on. We maintain watchmen. We keep one operator on the so-called dock property. It is the point at which our purifier box and purification equipment is located. It is a separate city block separated from the rest of the plant. He reads meters and gets other information. That is a clock around operation.

That plant, that personnel, is the nucleus of the personnel which we would require to put that plant in capacity operation and keep it there for a week or more. Geographically that third ward station is located in a commercial and light manufacturing district where further expansion of plant is virtually impossible. In other words, we could not put an LPG plant at that location.

Q Do I understand that the Milwaukee Gas Light Company's own manufacturing equipment is at the third ward station?

A At the third ward station. That is the oil gas.

Q Can you give us an estimate of the present aggregate payroll of the crew that you have outlined here for the Milwaukee Gas Light Manufacturing operation?

A The total plant payroll?

Q Yes.

A I don't know what that is. We can get that information for you.

Q Will you furnish us with that?

jrf6

A Yes.

Q In general a description such as you have given here?

A Yes.

Q Do you think that they would not be adequate to handle these additional facilities which you are testifying to?

A Largely because of the fact that geographically it is impossible to locate additional LPG facilities at that plant. I think it is also geographically impossible to construct additional oil gas facilities at that plant.

Q Except in the actual emergency period these men relatively have nothing much to do?

A They are like firemen at the fire station.

Q You think it wouldn't be feasible to transport them back and forth between that plant and the other sufficient to keep it in condition to run?

A No, I don't believe that that is a feasible manner of operating. I believe that if you are going to have an equivalent standby plant to the coke plant, it must be manned and supervised and functioned completely independent of the water gas plant or the high Btu oil gas plant, I should say.

Q Do you think you would at least have to have a skeleton crew, new skeleton crew for the new plant?

A That is my opinion, yes.

jf7

Q In connection with this same information would you give us an estimate of how much of a skeleton crew you think you would need, and what you estimate the cost of it would be?

A Yes, I think I can. It is a hypothetical estimate, of course. We have testified somewhat along that line.

Mr. Clevenger: May we reserve Applicant's Exhibit 86?

Hearing Examiner: Applicant's Exhibit 86 is reserved. When that exhibit is received and filed with the Docket Section it will become a part of this record.

(Applicant's Exhibit No. 86 was
RESERVED.)

By Mr. Clevenger:

Q Mr. Brenner, is there any interconnection at any point in the Wisconsin area between other pipeline systems and Michigan-Wisconsin?

A There is none.

Q Has there been any recent consideration on the part of any group of which you know, or on the part of the Federal Power Commission, concerning the requirement that some other system be interconnected?

A None that I have knowledge of.

Q You know that it is not uncommon, do you not, for the Federal Power Commission to acquire various systems to interconnect for emergency situations?

jfr8

A That is correct.

Q Have you given any consideration, Mr. Brenner, as to how long you deem it necessary to retain the present standby arrangement, or comparable?

A As an operator I would like to of course keep all of this equipment available. I have gone through two strike situations in Milwaukee in which the gas supply was interrupted, in one case the interruption being our own operation, in another strike the interruption of the supply of gas from the Coke Company.

By way of fortuitous circumstances -- and call it very quick decision -- we have been able to keep at least enough gas on the system to avoid complete outage and complete drop of pressure in the distribution system.

So I have gone through this thing and I know the implications that interruption of gas supply involve. For an operating man they are the worst kind of a nightmare that you can get into because you can see all sorts of situations developing, houses blowing up, people asphyxated and so on.

Q You are aware, are you not, that it is not uncommon in these types of situations with this so-called standby equipment to be entirely abandoned within from five to ten years?

A I know that production facilities have been abandoned and some standby facilities have been abandoned.

JF9

Again I have an idea that the situation is not at all parallel to the Milwaukee situation, and that there are other factors. In one instance I know that there are other factors that enter into the picture. In other words, plant was worn out and there was just no further purpose in maintaining it.

Q What is the present status of the Solvay property?

A I believe that the plant is in a stage of normal, I think I can without exaggeration say good maintenance.

Q To what extent did the 20 new ovens that were installed, supercede or supplant existing facilities that had been in use for years?

A They are additional ovens rather than a replacement of existing ovens.

Q Am I to understand by that that the ovens that have been there all the time prior are still in good operating condition?

A They are.

Q Efficient producers?

A That is correct.

Q Do you think that you would have, as an operating man, considered the investment in the additional 20 ovens that the Coke Company installed were it not for the relationship between the Coke Company and the Gas Company?

jf10

A I had no part in the policy decision under which those additional ovens were installed. I do see, however, and I believe that the information I have bears out that the ovens were an important addition to the coke producing capacity of that plant in tonnage and quality of coke produced.

Q If I understand you correctly then, it is your present information at least that the 20 new coke ovens were installed primarily to supply the coke to Solvay's present coke purchasing market?

A That is the extent of my information, yes.

Q Does that represent an expansion or an increase in the annual requirements of the Coke Company's markets from those ovens, or what was the relationship?

The Witness: May I have the question read?

A I believe that they had an existing market which could reasonably absorb that additional coke produced by those ovens.

By Mr. Clevenger:

Q If I am correctly informed, from the records which have been incorporated here, the annual reports to the Wisconsin Commission, particularly that for 1951, the gross revenue of Solvay for the year 1951 was something in excess of \$12,000,000. According to testimony here today, the expense for the 12 months ended October 31, I believe it was, 1952,

jf11

disclosed gross revenues to be approximately \$9,800,000. In the light of that would you say that the need for those 20 coke ovens was an added market demand or was it a replacement of equipment that was worn out?

A I know this: that it was not a replacement of equipment going out of service.

Q The operation of those ovens would not be at least fully reflected in the 1951 operations?

A I don't believe they would.

Mr. Foote: Mr. Clevenger, I might say one thing, which is that there is a strike, you will remember, in the steel industry during a part of that 12 months ended the recent date, which dropped out three months or so of a good part of the Coke Company's market and resulted in a considerable reduction in its sales.

Secondly, the figures that you have there were only coke sales as the figures were given this morning, and left out about \$750,000 gas sales.

Mr. Clevenger: You mean \$9,800,000 was strictly coke sales?

Mr. Foote: Yes.

Mr. Clevenger: What was the total revenue for Solvay for the 12 months ended October 31, 1951?

Mr. Black: The total operating revenues were, for the 12 months ending October 31, 1952, \$11,766,636.

jf12

Mr. Clevenger: Mr. Black, do you have the information with respect to the particular three months affected by the strike, as to what those sales were with relation to the corresponding period?

Mr. Black: No, I haven't that here. I can very easily furnish it.

Mr. Clevenger: Would you do that? May we reserve Exhibit No. 87 for that?

Hearing Examiner: Yes. When Applicant's Exhibit 87 is received and filed with the Docket Section it will become a part of this record.

(Applicant's Exhibit No. 87 was reserved.)

By Mr. Clevenger:

Q My information is that at December 31, 1951, Milwaukee Gas Light had on deposit with the trustee under its bond indenture something like one and a half million dollars which it had not taken down. Do you know what the status of that is at the present time?

A No, I do not.

Q I noticed that in the balance sheet, Exhibit 77, I found no item corresponding to that, at least insofar as it is identified in that exhibit. I was wondering if the one and a half million dollars had been drawn down from the trustees since the first of 1952?

jf13

A That is an exhibit prepared by Mr. Black.

Mr. Black: That has all been drawn down.

Mr. Clevenger: I believe that is all for the moment,
Mr. Brenner.

Mr. Foote: May I ask a couple of clarifying questions?

Mr. Clevenger: Yes.

REDIRECT EXAMINATION

By Mr. Foote:

Q In the course of Mr. Clevenger's questions he inquired as to comparative costs between the standby facilities furnished by the Coke Company and furnished by this hypothetical LPG plant with a capacity of 110,000 therms per day. The figure of \$1,100,000 that you gave for such a plant didn't include anything for lines necessary to connect that plant to say the Sewerage Commission?

A No, it did not.

Q So that you would have the same problem of securing lines from that plant to the Sewerage Commission that you have in securing lines from the coke plant to the Sewerage Commission, wouldn't you?

A Yes, I would.

Q Then in addition you get dividends from the Coke Company, do you not?

A We do.

Q So that would it be fair to consider anything like

jf14

the full \$4,300,000 cost to the Coke Company as in any sense the cost of standby facilities for the company?

A I don't think that that --

Q You regard the Coke Company more in the nature of an investment from that point of view than the cost of standby facilities?

A I think it is an investment, yes.

Q And the \$100,000 fee represents substantially the entire cost of the Coke Company as standby?

A That is correct. It is those expenses and so forth that they incur, in order to keep the facilities at their plant in readiness to give us this 110,000 therms total gas in the event of an emergency.

Q Mr. Clevenger inquired about the need for obtaining gas from your standby source during the 14-day interruption of the Michigan-Wisconsin Pipe Line during the Kansas floods. At what time of year did that interruption occur? Do you remember approximately?

A That was not in the dead of winter. It was --

Q Was it at a time when your demand was relatively light?

A That is right.

Q So that if it occurred during the dead of winter the situation might have required the use of your standby facilities?

Jf15

A I believe it would have.

Q You believe it would have required it?

A Yes.

Q But it would have been a curtailment rather than a complete failure of supply?

A Undoubtedly it would have been a curtailment in that the gas available from the storage field would have been located in some fashion between the distributing companies. In consequence Milwaukee would have had some delivery of gas, some delivery of natural gas.

Q So that Mr. Clevenger's questions indicated an interest in your maximum day, and the relationship of your standby capacity to that maximum demand? I take it from what you have just said there are certain situations under which you would have a curtailment rather than a complete shut-off of gas even though the fault in the line occurred on the maximum day?

A That is correct.

Q If the failure in the line did not occur on a maximum day you would have some lesser demand for gas that had to be met from your storage facilities -- I mean from your manufactured facilities?

A We would have a lesser demand for gas wherever we would supply that from. It would be of course the sum of such natural gas as was delivered plus the gas that we

jf16

manufactured under the emergency conditions.

Q Do you have any way of estimating even roughly during what portion of the year your maximum demand does not exceed 455,000 therms per day?

A I think you would have to go back to the send-out that we have experienced over this last summer season and set it alongside of this 455,000 therms in order to arrive at a conclusion on that. At any rate it seems to me that the period might be a relatively short period in that in the event of a complete curtailment you would have to draw -- you could draw only on such gas as you had in storage and such production as you had.

If there were even one day in a group of seven in which let's say the demand should develop unduly like a Monday or Tuesday, you might get beyond the productive capacity of your standby plant.

Q During such period of curtailment you would be able to cut off all your interruptible?

A We surely would.

Q You probably would be able to cut some of your industrial load if you were under a condition where you were getting no natural gas?

A We surely would make every effort to curtail our industrial, large industrial customers for the sake of keeping gas on the city and keeping our residential customers supplied.

jf17

Q So that there might be a substantial period of the year during which you could meet not your normal full load but your full load as it could be reduced under emergency conditions?

A That is correct.

Q There also might be a fair length of time during which the difference between 455,000 therms of standby and 345,000 would make a difference in being able to meet your irreducible minimum load?

A That is correct. In other words, the loss of the 110,000 therms of coke oven gas might be very, very serious in our ability to meet even a summer day should there be a complete outage of natural gas.

Mr. Foote: That is all that I have.

FURTHER CROSS EXAMINATION

By Mr. Van Susteren:

Q Mr. Brenner, you mentioned a break during the Kansas City floods in July 1951 which lasted two weeks. Are you aware of any other break that has occurred in pipe lines that lasted that long?

A No. I don't know of any on the Michigan-Wisconsin system.

Q Are there any hazards, pipeline hazards, such as streams and so on, between Sandwich, Illinois, and Milwaukee, which might cause a break?

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A There are no streams, no river crossings or crossings in let's say valleys which are subject to flood and so on. I don't think we have anything of that kind in the run of line from Sandwich to Milwaukee.

Q Are there any between Sandwich and Michigan storage fields?

A I am not too familiar with that. I don't recognize any as I recall the geography of that area. I don't recall that there are any major river crossings or crossings subject to flood.

Q Have there been any breaks at all between Michigan storage fields and Milwaukee via Sandwich, to your knowledge?

A To my knowledge there haven't been. There may have been some. If there were they were not of any duration, surely not of a magnitude such that we were called to be alert with respect to curtailment or in any way affecting our supply of natural gas from Michigan-Wisconsin Pipe Line.

Q And that is true since the advent of natural gas into Milwaukee?

A That is true.

Q Would the 20 new ovens installed at Solvay, were those ovens installed after the gas contract with Milwaukee Solvay?

A Yes.

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Q Then would you suppose that Solvay is producing more gas now than they did at the time of your contract with Solvay?

A I don't believe they are. I believe that other modifications of their operation such as a change in the ratio of high and low volatile coke, the duration of their carbonizing period, all of them have operated in such a manner that the net gas release is not any greater than it was at the time that Milwaukee Gas Light acquired Solvay.

Q Mr. Brenner, you were a witness before the Public Service Commission of the State of Wisconsin in October of 1945 and there was some testimony there about the possibility of peak shaving with your standby facilities in case the demands for natural gas could not be met by the pipeline. Has your company done any peak shaving through your standby facilities at all?

A It has not.

Q Is there any reason for it?

A I think the principal reason is that it is very, very costly production and that the setup of the system in the Wisconsin-Michigan system, with the storage fields in Michigan, makes such peak shaving unnecessary and, as I say, rather costly.

Q Have you turned down any industrial customers in Milwaukee, any industry that wanted gas?

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A I don't believe we have.

Q Have you eliminated or forbidden space heating?

A We have, and we are under restrictions at the present time.

Q Who set those restrictions?

A Those restrictions were set by the Public Service Commission after hearings.

Q Can you recall why the Public Service Commission set the restrictions?

A I don't recall what the basis of the restriction is. I believe it was an allocation. The basic idea is an allocation of the natural gas available from the Michigan-Wisconsin Pipe Line System.

Mr. Van Susteren: That is all that I have.

Mr. Clevenger: In the light of this, Mr. Examiner, I have two or three more questions.

By Mr. Clevenger:

Q Mr. Brenner, I am not sure that I understood the import of your answers to Mr. Foote's questions about the variation that occurs in the demands that might be placed upon this standby equipment. When is 110,000 therms of coke oven gas available to Milwaukee Gas Light from Solvay?

A On demand arising out of a shortage or curtailment of natural gas.

Q Will you refer to Exhibit 74 for a moment, at the

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top of Page 2? As I read that contract it says that Solvay is obligated to supply Milwaukee Gas Light with gas in excess of the 60,000 therms in the event of a breakage, accident, or failure of a pipe line system supplying gas.

A That is correct.

Q Do you think that that means anything other than what it says, and that that means a complete failure of the pipe line?

A No, I don't think that it is limited to a complete failure of the pipe line. I think any curtailment in the supply of natural gas by pipe line as a result of accident, breakage or so on, would bring into action the circumstance that the Coke Company shall deliver 110,000 therms per day if we so requested.

Q Do I understand that you mean by that that you might be getting a partial delivery of the contract volume from the pipe line of natural gas and at the same time be able to require Solvay under this contract to furnish up to 110,000 therms?

A That is my understanding, yes.

Q You also said something about the cost of lines to connect this new projected or assumed facility with the Sewerage Commission. Did you mean that?

A Yes.

Q Do you mean that you would build a new auxiliary

jf22 standby facility purely to supply the Sewerage Commission?

A No, not to supply only the Sewerage Commission. But to meet our obligations as we have them to our firm customers and to the Sewerage Commission under the existing contract.

Q Do you mean that you would even connect the lines to the portion of the system as part of the Sewerage Commission?

A I would certainly like to know that I would have a path by which to get that gas to the sewage plant if it had to be, not that I would build a line, to use an exaggerated example, to locate the standby LP facility at the far end of our service area and then build a line all the way back to the sewage plant.

Q Do you want this record to infer that if Milwaukee Gas Light did not own Solvay that Milwaukee Gas Light would take the obligation of supplying the Sewerage Commission with gas?

The Witness: May I have the question read?

(Question read.)

A I think we would, if we could work out a satisfactory selling arrangement.

By Mr. Clevenger:

Q And if necessary you would build a sufficient capacity to supply them?

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A No. I think we would certainly want to supply them from our natural gas supply.

Q You said that you considered Solvay in the nature of an investment. Forgetting for the moment the standby arrangement that you have, for which you have already testified you are getting a quid pro quo, do you think that an investment of \$4,000,000 by Milwaukee Gas Light in a coke chemical business is an appropriate investment for a public utility company?

A When you tie it down to that amount of money I don't know that I would include it in that respect.

Q That is what you were talking about when you considered it an investment ex the standby benefit?

A I would have to think that one over more carefully.

Q Do you know what the situation would be as to the availability of natural gas to Milwaukee from the Austin storage field in the event of a complete greak in the line below the Wisconsin junction?

A I haven't seen it, but I am informed by the operating personnel of the pipe line that they can withdraw gas and do withdraw gas from the storage field and transport it in the reverse direction from the Michigan storage fields to the junction point where the Wisconsin lateral exists.

Q Do you know that they did do that?

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A I know that they did do that.

Q During this 14-day period that we are talking about?

A That is my understanding.

Q It so happened that that 14-day period was in the summer time.

A That is right.

Q Do you know what would have happened had it been in December?

A I don't think that they would have been able to deliver the full requirement of Milwaukee's gas requirements at that time.

Q You know that this record shows that the storage capacity of that field is adequate to substantially supply the adequate demands of the Detroit market on the Michigan-Wisconsin line for approximately 100 days?

A That is right.

Q You don't anticipate any break in that pipe line that is going to take 100 days to fix, do you?

A No, but I don't believe that any one customer on that system is the only customer who should be protected by that Michigan storage field.

Q That line is dedicated to the supply of Michigan Consolidated and the Wisconsin market; is that correct?

A It is dedicated to the system and all of the

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companies that are being supplied.

Q There is only Michigan Consolidated and Milwaukee in the system, aren't there?

A There are some deliveries to --

Q There are some contract customers up the Lake that are included in the Wisconsin market; is that correct?

A That is correct. There is also I think delivery to some Iowa utilities.

Q On a comparative basis they are de minimis?

A That is right.

Q Do you visualize any situation where, with 100 days of storage capacity in the Austin field, that they couldn't supply Milwaukee and Michigan Consolidated both during any reasonable length of time of breakage below the Wisconsin junction?

A I think they could supply a reasonable length of time, provided the amount of gas -- again depending on how much gas there is stored in the Michigan field at a particular time when this break occurs; it might occur at a period when the Michigan storage field has already been drawn down by the season's demand to quite an appreciable point.

Q In the normal operation of the line is there any appreciable amount of gas taken out of the Austin storage for utilization in Detroit during the winter season?

A My understanding is that during the winter season

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in the periods of heavy demand, gas is withdrawn from the Michigan storage field to supply in part the requirements of Detroit.

Q Do you know to what extent they have ever experienced a radical reduction in the Michigan storage field in order to supply Detroit since the pipe line was completed?

A I don't know of that. I think that the most critical situation was this period of the Kansas floods. That was the heaviest drain on the Michigan storage field.

Q Of course, that was due to the fact that it happened during the period when they were normally storing gas up there, wasn't it?

A That is correct. Of course, whatever gas they did get, or whatever gas they took out of that storage field, and whatever gas they weren't able to put into that storage field, to that extent at least reasonably they were not able to store for the subsequent winter.

Q You wouldn't have that comparable situation if this situation occurred during the period Mr. Foote was inquiring about, would you, because you would be past the storage season? You would presumably have a field full.

A At the end of the storage season, yes, then you would have a field full. Of course, if it occurred at a time when you were drawing the field down to a minimum, that would be another story.

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Q Do you know, Mr. Brenner, or do you have available any information to show what the present status of the storage in the Austin field is?

A I don't know.

Q Do you ever have available any reports or data to show how much gas is in storage there at any given time?

A No reports of that nature come to me in the course of my operations.

Q How do you know when an emergency situation occurs whether or not there is anything in the Austin field for you?

A I would say to the extent that I am in touch with and confer at quite regular intervals with Bob McClintock, who is, I believe, the manager for the pipe line system in Wisconsin.

Q Doesn't the pipe line have a so-called central load dispatcher?

A Yes, they do.

Q Isn't he daily in contact with each of the companies with respect to its requirements and approximately when they will need them and when they anticipate a maximum day and all the rest of the necessary operating data?

A He certainly isn't in contact with the Milwaukee Company that I know of in that degree.

Q Isn't that his function?

A I think his function is to, as I understand it,

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keep pressure on the line and supply the distributing companies.

Q It is his business to know where the gas is and where it is needed, isn't that correct?

A That is correct.

Q Wouldn't it be part of his duties to know what Milwaukee's requirements were estimated to be?

A Yes, I think it is up to him to know what the Milwaukee requirements are. I think that he is supplied with information, graphical and chart information, and other data, which permits him to estimate quite closely what the Milwaukee requirements are, largely as a function of temperature.

Q Are you familiar, Mr. Brenner, with the designed storage capacity of the field?

A No, I am not.

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Q This record shows that the designed capacity is about 37 million Mcf. I hand you a Form 2 report of the Michigan-Wiscon Pipeline Company to the Federal Power Commission for the year ended December 31, 1951, and which is an exhibit to American Natural Gas Company U5S for 1951, File 30-2 and call your attention to Items 37, 38, 39, and 40, and 41 in that report, and ask you if you will read those figures into the record as to what they represent.

A Line 37 of this report reads:

"Stored gas, end of year, Mcf, 26,640,080. Estimated native gas in storage reservoir, Mcf, 41,328,000.

"Line 39, total gas in reservoir, Mcf, 1937 plus 1938, 67,968,080.

"Line 40, storage capacity (exclusive native gas), Mcf, 37,100,000.

"Line 41, reservoir measure at which storage capacity computed, 600 PSIG."

Q Does that indicate to you that there is a considerable quantity of gas in that reservoir at the end of December 1951?

A That looks like an awful lot of gas to me.

Q That was right in the middle of the winter season of 1951, wasn't it?

A This is at the end of -- yes, December 31, 1951.

Q That was the year that this 14-day interruption

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occurred in the summer time when they were supposed to be storing gas?

A That is right. Of course I have no intimate knowledge of what the requirements of the Michigan-Wisconsin Pipeline Company are to its distributors.

To me these quantities look like an awful lot of gas.

Q The only thing that I know about it, is that this record on the hearing on the plan itself, of which this hearing is a result of a reservation, indicates that with that amount of gas, they could supply all of the requirements of Detroit, so far as Michigan-Wisconsin line was concerned, for 100 days or approximately that.

If they could do that for 100 days, they could certainly supply Milwaukee for 14 days and still not hurt Detroit, couldn't they?

A That calls for an opinion with respect to the management of a storage field and markets with which the Michigan-Wisconsin Pipeline Company is obligated to take care of, of which I have no knowledge.

I know that it calls for quite careful management of that supply.

Q You do know --

A How it is to be doled out or husbanded out under every operating situation.

Q You do know, do you not, that the Federal Power

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Commission regularly very closely supervises the allocation of the capacity of that line?

A That I do.

Q And you have no reason to believe that Milwaukee wouldn't get its fair share of whatever the capacity of the line is?

A I certainly hope that we get our fair share and I believe we will.

Mr. Clevenger: I believe that is all that I have of Mr. Brenner:

Mr. Dern: May I ask one question?

Hearing Examiner: Yes.

FURTHER REDIRECT EXAMINATION

By Mr. Dern:

Q If you were faced with an emergency, Mr. Brenner, where you withdrew from storage a very substantial amount of gas, it is obvious is it not, that that gas would no longer be in storage to supply the remainder of the heating season?

A That is correct.

Q From your knowledge of the function of the storage field, wouldn't you say that you have to keep in mind the demands of the entire heating season as one of the elements in your calculations as to how fast you can use stored gas?

A That is correct.

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Q Would not also the rate of withdrawal be a factor which would have a bearing, that is, the amount that you can withdraw under various circumstances from the field?

A That is a factor. In other words, you can't overdraw those fields. There is a limit as to how fast you can take it out of there.

Mr. Dern: That is all.

Hearing Examiner: Let us recess until 10 o'clock tomorrow morning.

(Whereupon, at 5:20 p.m., the hearing was recessed, to reconvene at 10 o'clock, Tuesday, November 25, 1952.)